

**REMARKS**

The Office Action of August 29, 2008 was received and carefully reviewed. Reconsideration and withdrawal of the currently pending rejections are requested for the reasons advanced in detail below.

Claims 8, 17, 24, 30, 47, 53, 54, 60-63 and 68-87 were pending prior to the instant amendment. By this amendment, claims 60, 61, 68 and 77 have been amended, claims 8, 17, 24, 30, 47, 53, 54, 71-76 and 80-87 have been canceled without prejudice or disclaimer, and new claims 88 and 89 have been added (see, for example, Fig. 10C of application). No new matter has been introduced. Consequently, claims 60-63, 68-70, 77-79, 88 and 89 are currently pending in the instant application with claims 60, 61, 68 and 77 being independent.

In the Office Action, the Examiner states that claims 54, 71-76 and 80-87 are withdrawn from further consideration as being drawn to a nonelected invention; claims 8, 17, 24, 30, 47, 53, 68-70 and 77-79 are withdrawn from further consideration as being unreadable on the elected species, as they as are not necessarily involve an insulating film formed of aluminum nitride and oxygen on the front side, as required in the elected Species 3; and claims 60-63 remain active in the office action. In response, Applicants have amended claims 68 and 77 to include the features of the readable claims 60-63 except oxygen in the second insulating film as shown in the above amendments. Thus, Applicants contend that claims 68 and 77 are generic to the elected species 3. Therefore, Applicants believe that claims 68 and 77 as well as their dependent claims should be examined along with claims 60-63.

Additionally, claims 60-63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese patent application JP 59-121876 to Ikeda et al. (Ikeda) in view of U.S. Patent No. 5,270,263 to Kim et al. (Kim) and further in view of U.S. Patent No.

5,637,187 to Takasu et al. (Takasu) and/or Japanese patent application JP 62-181419 (JP '419) and/or U.S. Patent No. 4,851,363 to Troxell et al. (Troxell) and further in view of U.S. Patent No. 5,032,883 to Wakai et al. (Wakai). Ikeda, taken in combination with Kim, Takasu, JP '419, Troxell and/or Wakai, however, fails to render the claimed invention unpatentable. Each of the claims recite a specific combination of features that distinguishes the invention from the prior art in different ways. For example, independent claims 60, 61, 68 and 77 each recite a combination that includes, among other things:

a transistor provided over said third insulating film, said transistor having at least a channel formation region, a source region, a drain region, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween ... wherein crystallinity of said source region or the drain region is higher than crystallinity of said channel region.

(See, for example, Embodiment 7, Fig. 10C of application). At the very least, the applied references, whether taken alone or in combination, fail to disclose or suggest any of these exemplary features recited in independent claims 60, 61, 68 and 77.

The Examiner has failed to establish a *prima facie* case of obviousness for at least four reasons. First, the Examiner has not demonstrated how Ikeda, Kim, Takasu, JP '419, Troxell and/or Wakai, whether taken alone or in combination, disclose or suggest each and every feature recited in the claims. *See* M.P.E.P. § 2143 (7th ed. 1998). Second, the Examiner has not shown the existence of any reasonable probability of success in modifying Ikeda, the base reference, based on the teachings of Kim, Takasu, JP '419, Troxell and/or Wakai, the secondary references, in a manner that could somehow result in the claimed invention. *See id.* Third, the Examiner has not identified any suggestion or motivation, either in the teachings of the applied references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the apparatus of Ikeda in a manner that

could somehow result in the claimed invention. *See id.* Finally, the Examiner has not explained how his obviousness rationale could be found in the prior art — rather than being a hindsight reconstruction of Applicants' own disclosure. *See id.*

Each of the Examiner's factual conclusions must be supported by "substantial evidence" in the documentary record, as required by the Federal Circuit. *See In re Lee*, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002). The Examiner has the burden of documenting all findings of fact necessary to support a conclusion of anticipation or obviousness "less the 'haze of so-called expertise' acquire insulation from accountability." *Id.* To satisfy this burden, the Examiner must specifically identify where support is found within the prior art to meet the requirements of 35 U.S.C. §§ 102(b) and 103. In this case, however, the Examiner has failed to satisfy his burden of demonstrating how Ikeda, taken alone or in combination with Kim, Takasu, JP '419, Troxell and/or Wakai, can either anticipate or render obvious each and every one of the limitations present in independent claims 60, 61, 68 and 77 as required by the M.P.E.P. and Federal Circuit jurisprudence.

The Examiner asserts that Ikeda discloses a semiconductor device comprising: a substrate (11; glass) having a front surface and a rear surface; a second insulating film formed of an aluminum nitride insulating film (12) provided on the front surface of the substrate; and a transistor provided over the front surface of the substrate, the transistor having at least a channel formation region comprising silicon (15a and/or 15b), a gate insulating film (14) adjacent to the channel formation region, and a gate electrode (13a and/or 13b) adjacent to the channel formation region with the gate insulating film interposed therebetween. However, Applicants contend that Ikeda fails to teach or suggest the features of a transistor provided over the third insulating film, the transistor having at least a channel formation region, a source region, a drain region, a gate insulating film adjacent to the channel

formation region, and a gate electrode adjacent to the channel formation region with the gate insulating film interposed therebetween, wherein crystallinity of the source region or the drain region is higher than crystallinity of the channel region, as recited in claims 60, 61, 68 and 77.

The Examiner attempts to remedy the deficiencies of Ikeda by turning to Kim. The Examiner asserts that Kim suggests that “one of ordinary skill in the art would readily recognize that an aluminum nitride insulating film can be commonly and desirably formed through sputtering with a nitrogen gas being used as both the reactive gas and the sputtering gas for achieving desired high quality for the insulating film; and, the aluminum nitride insulating film formed through such sputtering process naturally contains (more or less) certain oxygen (see col. 5, lines 38-39; also see the naturally existing O in Fig. 5), as O is one of the nature’s most abundant elements and it is normally unpractical to completely remove it from such a sputtering system.” However, Kim fails to disclose or suggest the features as discussed above with respect to Ikeda and as recited in independent claims 60, 61, 68 and 77.

Further, Takasu, JP ‘419, Troxell and/or Wakai do not cure the deficiencies of Ikeda in view of Kim, as mentioned above. Therefore, Applicants note that independent claims 60, 61, 68 and 77 are allowable as discussed previously. Any claim that depends from an allowable claim is allowable as well. Also, the dependent claims recite combinations including additional features not taught or suggested by the Ikeda and Kim documents. Thus, Applicants respectfully request that the rejection to dependent claims 62, 63, 69, 70, 78 and 79 be removed.

In accordance with the M.P.E.P. § 2143.03, to establish a *prima facie* case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a

claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 196 (CCPA 1970). Therefore, it is respectfully submitted that neither Ikeda, Kim, Takasu, JP ‘419, Troxell nor Wakai, taken alone or in any proper combination, discloses or suggests the subject matter as recited in claims 60, 61, 68 and 77. Hence, withdrawal of the rejection is respectfully requested.

Each of the dependent claims depend from one of independent claims 60, 61, 68 or 77 and are patentable over the cited prior art for at least the same reasons as set forth above with respect to claims 60, 61, 68 and 77.

In addition, each of the dependent claims also recite combinations that are separately patentable.

In view of the foregoing remarks, this claimed invention, as amended, is not rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this response, the Examiner’s reconsideration and reexamination of the application, and the timely allowance of the pending claims.

In discussing the specification, claims, and drawings in this response, it is to be understood that Applicants in no way intend to limit the scope of the claims to any exemplary embodiments described in the specification and/or shown in the drawings. Rather, Applicants are entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

Should the Examiner believe that a telephone conference would expedite issuance of the application, the Examiner is respectfully invited to telephone the undersigned agent at (202) 585-8100.

Respectfully submitted,

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